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Managing the Opportunities and Risks Associated with Disruptive Technologies space law in New Zealand

A key challenge for regulators is how to enable entrepreneurship and innovation while managing the risks associated with rapidly evolving technologies and associated market change. A number of technologies could be used to illustrate this problem, such as the internet, gene editing and driverless vehicles. However, the Ministry of Business, Innovation and Employment (MBIE) recently had to face this specific issue in relation to space activities.

Space was once the domain of a small number of nation states and large corporations. This reflected that only a few players had access to the advanced technologies required to launch objects into space, or could afford the significant investment associated with building, launching and operating satellites. Today, many more players are able to access space. Advances in technology have enabled the production of smaller, cheaper and more powerful satellites. The

standardisation and mass production of small satellites have also reduced barriers to entry and driven innovation in space-related services and applications.

Growth in the small satellite industry has in turn created demand for small satellite launch vehicles. Developments in space technologies and space business models means that space is now open to a new generation of entrepreneurs and enthusiasts, and countries around the world are keen to share in the full range of economic development and social benefits that space offers.

In 2015 the New Zealand government decided to enable space launches from New Zealand

Rocket Lab, a United States corporation with a subsidiary in New Zealand, is the main commercial player in New Zealand's emerging space industry. Rocket Lab has developed the Electron space launch vehicle to provide a dedicated launch service for small satellites. The company's mission is to remove commercial barriers to space. Rocket Lab recognised that New Zealand offered an attractive location for space launch activities, due to our innovation-friendly business environment, strong science and

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research and development system, skilled workforce and suitably remote geography (including low volumes of air and sea traffic).

Space is a multi-billion dollar global industry and it has huge strategic importance. Satellites enable the provision of critical everyday services and infrastructure, including banking, transportation, electricity, telecommunications, navigation, remote sensing and national security. The industry is an important source of innovation and high-tech and high-value jobs. The development of a New Zealand-based space industry would enable New Zealand to participate directly in this new economy and ensure that all New Zealanders could benefit from the opportunities that the use of space and our participation in the global space economy have to offer. However, New Zealand had no specific space regulation, in contrast to many other countries.

In a little under two years New Zealand has gone from having no national space law to having a new act to regulate New Zealand space activities. The Outer Space and High-altitude Activities Act was passed in July 2017. The act governs the launch of space objects such as rockets and satellites into outer space from New Zealand (and by New Zealanders overseas) and it regulates launch facilities. The act also introduces a regime to manage certain high-altitude activities that take place from New Zealand, such as high-altitude balloons. (High-altitude vehicles operate above controlled airspace but do not go into outer space.)

This article sets out the main steps in the process of developing the new regulatory regime and describes the key considerations that influenced the content of the regime.

Legislation was necessary to meet New Zealand's international obligations associated with space activities

One of the first steps in the process was to assess whether New Zealand's existing domestic law was adequate to manage space activities or whether a new law would be required. It quickly became clear that a new law was needed to ensure that we could comply with certain international

obligations and manage risks associated with space activities (including risks to safety, the environment and national security).

International space treaties

In the 1960s and 70s, New Zealand ratified three international space treaties:

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies – ratified 1968;
- Convention on International Liability for Damage Caused by Space Objects – ratified 1974;
- Agreement on the Rescue of Astronauts, the Return of Astronauts

and the Return of Objects Launched into Outer Space (the Rescue Agreement) – ratified 1969.

At the time that these treaties were ratified, New Zealand's policymakers and legislators clearly deemed legislation unnecessary to implement them. As noted above, at the time space activities were carried out by states rather than commercial operators, and New Zealand policymakers could be confident that no national space activities were taking place.

Fifty years later, Rocket Lab's activities provide a graphic illustration of how developments in technology have changed the space industry and made it accessible to a wider group of participants. This necessitated a change of view on the need for legislation to implement the rights and obligations of the space treaties. It also led us to consider how to ensure that legislation would provide a balance between risk management and not inhibiting economic development and innovation. This is discussed further below in the context of the two determinative international space treaties.

The Outer Space Treaty

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (known as the Outer Space Treaty) provides the principles that govern the exploration and use of outer space. It requires that the exploration and use of outer space, including the moon and other celestial bodies, is carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and is to be the province of all mankind. Outer space, including the moon and other celestial bodies, is to be free for exploration and use by all states without discrimination of any kind, on a

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basis of equality and in accordance with international law, and there is to be free access to all areas of celestial bodies.

There are also restrictions on certain activities in space, such as placing nuclear weapons or weapons of mass destruction in orbit or installing military bases on celestial bodies (some of which found their way into the purpose statement in the legislation). To this end, the Outer Space Treaty imposes a number of obligations on states. Most importantly, article VI imposes international responsibility on states for their national activities. It is clear from the Outer Space Treaty itself, and to a lesser extent from the terms of the later Liability Convention (discussed below), that national activities include the launch of space objects from New Zealand and the launch of space objects by its nationals.

If space launches were to take place from New Zealand, a new law would be necessary to implement the international space treaties. The legislation would also need to have some extraterritorial effect. This is because, under the Outer Space

Treaty, each party bears international responsibility for its national activities in outer space, whether those activities are conducted by public or private entities and whether they are conducted in New Zealand or in another jurisdiction.

The Liability Convention

Under the Convention on International Liability for Damage Caused by Space Objects (known as the Liability Convention), the launching state is absolutely liable to pay compensation for any damage its space objects cause to other parties, or to third states, on the surface of the Earth or to aircraft in flight. Liability for damage caused elsewhere

overall design of our domestic legislative regime.

The Technology Safeguards Agreement (TSA)

In order for Rocket Lab to commence space launch activities from New Zealand, it had to seek approval from the United States government to transfer sensitive technology to New Zealand. The US would only allow the transfer of this technology if New Zealand concluded a treaty-level Technology Safeguards Agreement with the US government.

The TSA imposes certain obligations on New Zealand in relation to the safe and secure transfer, use and management of US space launch technologies. The

Act and the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act) would be adequate to manage safety and environmental risks in New Zealand. However, the novel aspects of space activities in New Zealand meant that there are other interests that needed to be considered and built into the design of the New Zealand regime.

For example, the long-term sustainability of the space environment and the management of orbital debris have become increasingly important internationally, given the increase in space activities and the significance of space applications to modern societies. This needed to be factored into New Zealand's domestic regime.

In addition, issues around national security are highly relevant. Space applications have the potential to benefit, and also pose risks to, national security. Many space technologies are dual purpose, which means that they can be used for peaceful as well as military objectives. A new domestic law was needed to allow the benefits but also put in place appropriate safeguards to ensure that space activities were aligned with New Zealand's national interests, including its national security.

One of the biggest challenges with new technologies is that innovative activities or products ... rarely become visible to governments in time for governments to legislate before they are ready to emerge.

– for example, after a space object is launched into orbit – is fault-based. The term 'launching state' means '(i) A State which launches or procures the launching of a space object' and '(ii) A State from whose territory or facility a space object is launched'.

Having discussed the interpretation of the Liability Convention with our counterparts in a number of overseas jurisdictions, it became apparent that states are struggling to interpret the international liability rules in a world where, increasingly, space activities are carried out by commercial rather than state actors. Perhaps even more importantly (since the Liability Convention has been invoked on only one occasion),¹ the way in which states have dealt with the international liability in their domestic regulation has had an effect on the competitiveness of space regimes and their effectiveness in establishing a domestic space industry. As discussed below, these were important factors in the

majority of the obligations on the New Zealand government are to ensure compliance by Rocket Lab and third parties, such as Rocket Lab's contractors, with the provisions of the TSA.

The TSA also protects New Zealand's laws and sovereignty over space launch activities from New Zealand. New Zealand is able to veto launches from New Zealand that are contrary to our domestic laws, regulations and policies. While many of the obligations under the TSA could be managed through contractual arrangements with Rocket Lab and the existing criminal law, legislation was necessary to fully implement the TSA.

Legislation was necessary to manage risks associated with space activities

As noted earlier, space activities create risks to public safety and the environment. For the most part, we anticipated that New Zealand's existing laws (including the Health and Safety at Work Act, the Resource Management

The risks associated with space activities needed to be managed while a new regime was being developed

One of the biggest challenges with new technologies is that innovative activities or products, while they might take time in development, rarely become visible to governments in time for governments to legislate before they are ready to emerge. This was the case with Rocket Lab. There was no real opportunity to legislate for its space activities before its planned first launch.

The solution was to regulate Rocket Lab's activities through a contract until legislation could be enacted. This allowed the government to pass on the requirements under the TSA through its contractual arrangements and to manage the risks associated with Rocket Lab's activities while the legislation was developed. In this respect, the government reserved the ability to veto any launch of a space object that would not be in the national interest during the

contract term, the intention being that licensing requirements would be in place by the time the contract expired (with careful arrangements to manage the transition).

A contract cannot be a substitute for legislation. A contract is only binding on the parties to it. While it applies directly to Rocket Lab, Rocket Lab can only regulate its customers indirectly through its ability to veto their payload. In addition, criminal offences can never be created by contract. However, it has proved to be a very valuable tool for managing Rocket Lab's activities pending the development of legislation and its coming into force.

There was another advantage of regulating Rocket Lab through the contract. We did not necessarily expect this at the time, but it seems obvious with the benefit of hindsight. It gave us an opportunity to engage with our international counterparts without hindering Rocket Lab's activities. That meant that we could benefit from the knowledge and experience of our international counterparts and bring it to bear when developing our domestic legislation.

It was also important to take account of developments in international space law and practice

A key consideration in the development of New Zealand's space law was to ensure that it was informed by international space law and practice. This was important to ensure that we developed an internationally credible regime that positioned New Zealand as a responsible player in the international space community. Aligning the content of New Zealand's space law with international best practice would also ensure that we could conform to our international obligations.

In addition to reviewing the approaches taken in other jurisdictions, we also engaged Professor Steven Freeland, an international space law expert at the University of Western Sydney, to give us the benefit of his knowledge and experience.

International practice is for countries to put in place licensing or permitting systems that provide the necessary

controls over participation in space activities, including powers to prevent or stop space launches in appropriate circumstances. A licensing regime also enables financial risk to be transferred to where it can best be managed, a key consideration given our obligations under the international space treaties. However, the approach taken to the new regime was not solely concerned with managing risk, but rather about managing opportunity and risk.

Space activities create opportunities for economic development and innovation

In order to quantify the opportunities for New Zealand arising from Rocket Lab's activities, MBIE commissioned

Although the law had to manage risk, it was important that it did not inhibit economic development

The content of the new regulatory regime is conditioned by what is necessary to comply with New Zealand's international obligations and to manage risk. However, we had choices around how prescriptive or permissive the regime was.

A prescriptive approach

If the primary objective was to manage risk, the government might have adopted a prescriptive approach, with detailed provisions in the primary legislation that specified requirements pertaining to implementation of our international obligations (including liability), safety

The establishment of a rocket industry in New Zealand presented a strategic opportunity to build New Zealand's capacity and expertise in space activities.

Sapere Research Group to undertake an assessment of the economic benefits of the development of a space launch industry in New Zealand. Sapere's report (June 2016) estimated that Rocket Lab could contribute between \$440 million and \$1,550 million to New Zealand over 20 years. The Sapere report focused primarily on launch activities. The benefits from a satellite industry could be significantly higher.

The establishment of a rocket industry in New Zealand presented a strategic opportunity to build New Zealand's capacity and expertise in space activities. Over time, the benefits could include the potential for different launch providers to operate out of New Zealand, as well as for New Zealand to design, manufacture and launch its own satellites. The decision to have the minister for economic development as the responsible minister under the act (albeit to be reviewed in three years) indicates the importance that the government places on the economic and innovation benefits of space activities.

and the environment. The advantage of this approach is that it provides space industry participants with certainty in the short term about what requirements they have to meet. However, there are certain disadvantages with a highly prescriptive approach. Having detailed requirements in the primary legislation would also limit the ability of the law to adapt to rapidly evolving space technologies and new markets. This reduces flexibility, which imposes unnecessary costs for industry and increases the risk of the law becoming obsolete. A prescriptive approach also requires the regulator to have detailed knowledge of the activities being regulated. This was not practicable given that space activities were new to New Zealand.

An example of a prescriptive approach to space law, particularly in relation to questions of liability and insurance, is provided by Australia's Space Activities Act 1998 (part 4). However, it was relevant to our consideration of this approach that the Australian government had announced a

review of their act.² The rationale for the review included the fact that space technologies had advanced significantly since the act was introduced and there was a need to ensure that Australia's space regulatory regime was facilitative of innovation and investment in this growing industry whilst effectively meeting Australia's international obligations in managing the space environment.

A performance-based approach

The alternative to a prescriptive approach is a performance-based approach. Performance-based regulatory regimes focus on setting intended outcomes that

account whether an applicant has an overseas license when considering whether to grant a New Zealand license (this is discussed in more detail below). In the initial two–three years of the regime we expect to rely on foreign licensing organisations in considering the safety and technical competence of space launch vehicles and payloads. This will provide time for the New Zealand regulator to build up the necessary technical expertise and regulatory capability. We will not rely on foreign licensing organisations to undertake national interest or national security analysis, however, as this will be a New Zealand-centric question.

providing for economic development was a key consideration in the development of the act. For this reason, the objective to facilitate the development of a space industry was built into the purpose statement of the act. Section 3 of the act states that the purpose of the act is to:

- (a) facilitate the development of a space industry and provide for its safe and secure operation;
- (b) implement certain international obligations of New Zealand relating to space activities and space technology;
- (c) without limiting paragraph (b), implement the obligations in the Outer Space Treaty not to –
 - (i) place in orbit around the Earth any objects carrying nuclear weapons or weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner;
 - (ii) establish military bases, installations, or fortifications on celestial bodies;
 - (iii) test any type of weapons or conduct manoeuvres on celestial bodies;
- (d) manage any potential or actual liability that may arise from the space industry;
- (e) establish a system for the regulation of space activities and certain high-altitude activities;
- (f) preserve New Zealand's national security and national interests.

Performance-based regimes are ... more likely to facilitate innovation and to avoid unnecessary regulatory compliance costs.

must be achieved, rather than prescribing detailed processes and procedures to be followed. Performance-based regimes are therefore more likely to facilitate innovation and to avoid unnecessary regulatory compliance costs.

A performance-based approach to the primary legislation allows the regulator's decisions to be tailored to particular cases. It is therefore more amendable to changes in technology, risks and market conditions. The more prescriptive elements that are required are provided for in regulations, which are more easily changed than primary legislation, and in guidance.

One important consideration in relation to designing a performance-based regime is that while performance-based regimes apparently avoid imposing unnecessary compliance costs on industry, if a regulator is truly going to be able to tailor decisions to individual cases, a significant investment is required in regulatory capability. Without that, it is not possible for the regulator to do their job adequately.

Recognising that MBIE currently has limited technical competence in relation to space activities, the new act (s51) allows the responsible minister to take into

The act establishes a flexible regime with a presumption in favour of economic development

The government's preferred approach was for a flexible, outcomes-based regime which would manage opportunities as well as risks. Consistent with this, the act provides for:

- a decision-making framework of which one of the purposes is to facilitate the development of a space industry;
- an ability to treat authorisations granted in a country other than New Zealand as meeting the requirements of the act;
- risk-based and proportionate decision making that tailors requirements to allow a graduated approach to risk management rather than a one-size-fits-all approach – e.g. flexibility to set conditions; and
- future-proofing to accommodate changes in technology and markets.

A decision-making framework with economic development as one of the objectives

Having regard to the economic benefits of space activities outlined earlier,

The act also gives power to the minister for economic development to issue licences for space activities: launch licences (i.e. licences for launch companies, such as Rocket Lab, that launch space objects into space) (ss7, 23), payload permits (i.e. permits for satellites that will be launched by companies such as Rocket Lab) (ss15, 31), launch facility licences (on the assumption that in the future there could be space ports with a different person operating a launch facility than the person who carries out the launch) (s38) and high-altitude vehicle licences (vehicles that operate at very high altitudes are increasingly innovative, with some carrying out much the same activities as satellites) (s45).

The minister must decline licences if he or she is not satisfied that certain risks are not being managed, and may decline a licence if he or she considers that the launch is not in the national interest. The minister has been given an explicit power to weigh up the economic benefits associated with the activity against other national interests when determining whether a licence should be declined on national interest grounds (clauses 2 and 3 of ss9, 17, 25, 33, 40, 47).

An ability to recognise overseas licences

One of the ways the act keeps compliance costs down is by enabling the decision maker to take into account foreign licences for the activity when deciding whether to grant a licence for launches, payloads or launch facilities. This approach has also been taken to enable New Zealand's space regime to operate effectively from day one – recognising that the initial applications for a New Zealand licence will come from Rocket Lab and its customers, who are subject to the US licensing regime.

The ability for foreign licences to be taken into account has influenced the nature of the regulations, particularly the nature of the information that needs to be provided with licence applications. For example, there is no need for an applicant to provide information to satisfy the minister that the applicant has the technical capability to carry out an activity, that the activity is safe, or that orbital debris mitigation requirements will be met if a competent body in another jurisdiction has already undertaken this assessment. The aim of this is to reduce unnecessary duplication and cost. International cooperation arrangements with certain foreign regulators will facilitate this aspect of the regime.

Risk-based and proportionate decision making

The act provides that the decision maker may grant a licence if he/she is satisfied that certain threshold tests have been met.³ These tests address key risk areas associated with space activities, such as risks caused by an applicant's lack of technical capability, risks to public safety, risks to the space environment and risks of breaching international obligations.

The detailed requirements imposed in relation to these tests are prescribed in the regulations that support the act (the Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017). As outlined above, the minister can also decline a licence if he or she considers that it is not in the national interests.

However, the primary legislation also enables the decision maker to apply a graduated approach to risk management. For example, flexibility is provided through the ability to set licence conditions that can be varied according to the circumstances.

Discretion is also explicitly provided for in the language of the act. For example, with respect to managing New Zealand's

regulatory regime we became aware of a range of new technologies being developed to operate at very high altitudes (above the upper limit of controlled airspace) and performing similar functions to satellites, including Earth observation and internet connectivity. In order to future-proof the space activities regime for these new technologies, and to ensure that similar applications and services provided by different technologies are treated consistently, the act brings high-altitude vehicles within scope of the regulatory regime. New Zealand is the first country in the world to establish a high-altitude activities regime to govern these activities.

The act's regulation-making powers also provide the necessary scope to deal

One of the ways the act keeps compliance costs down is by enabling the decision maker to take into account foreign licences for the activity when deciding whether to grant a licence for launches, payloads or launch facilities.

potential liability, the act provides that the minister may require a licensee, as a condition of the licence, to indemnify the Crown in whole or in part against any claim brought against the Crown under the Liability Convention or the Outer Space Treaty, or any other claim brought against the Crown under international law (ss10, 18, 26, 34). The experience in other jurisdictions has been that, unless the liability/indemnity regime is properly managed, innovation is easily stifled. The minister's ability to set tailored indemnity/insurance requirements having regard to the nature of the risks associated with the particular launch is intended to ensure that innovation is not stifled by onerous insurance requirements that are not justified by the risks associated with the activity.

Future-proofing the act to deal with emerging technologies and activities

During the development of the space

with changes to technologies and markets. For example, the act establishes regulation-making powers to prescribe that a thing is or is not, for the purposes of the act, a launch vehicle, a space object or a high-altitude vehicle (s88(1)(11)).

While powers of this kind that allow regulations to override a statute (often described as Henry VIII clauses) are generally frowned upon, both the Legislation Advisory and Design Committee and subsequently the Foreign Affairs and Defence Select Committee accepted that in areas such as this, where legislation struggles to keep up with rapid innovation, broad regulation-making powers are justified (albeit with safeguards, such as consultation requirements and a requirement for reasons) (s88(1) and (2)), which were incorporated into the legislation at the suggestion of the Legislation Advisory and Design Committee.

Carrying through the philosophy of the act into implementation

The act comes into force on 21 December 2017. Regulations to support the act come into force on the same day. Although the act contains broad regulation-making powers, not all of them must be used initially or are relevant for every activity; they have been built into the act to future-proof it and to enable a flexible approach to managing risk. However, certain regulations are necessary to implement the act when it comes into force. These include:

- requirements for licences and permits, particularly the information that applicants provide;

reason, some important aspects of the law, such as the requirements for orbital debris management and safety cases for space activities, were left to secondary legislation. The approach taken in the regulations – for example, to prescribing requirements for orbital debris mitigation plans and safety cases – is consistent with the outcomes-based approach in the primary legislation.

The regulations were developed in close consultation with other New Zealand government agencies which will be involved in undertaking the assessments required by the act, and with prospective applicants to ensure that the regulations provided the necessary degree

- minimisation of the potential for on-orbit break-ups;
- minimising the risk of collision;
- minimising the risk on Earth and in space through post-mission disposal.

Specifying the outcomes in regulations provides certainty for applicants about the outcomes that the debris mitigation plan will need to achieve while also providing flexibility about how the requirements are met. There are a range of international norms and standards for orbital debris mitigation that will meet these outcomes. These include the United Nations Debris Mitigation Guidelines, the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines and the International Standards Organisation (ISO) 24113. However, as the standards are evolving and there is not yet a single internationally recognised standard, it is not practicable to enshrine a particular standard in regulations. Instead, the regulations will require an orbital debris mitigation plan to state what standards have been applied and whether the plan has been independently verified.

While the potential for conflict between Rocket Lab's activities and the interests of airlines and shippers is minimal, if space activity increases this may become an issue with which we will have to grapple.

- requirements for orbital debris mitigation plans;
- requirements for safety cases for launch licences, launch facility licences and (non-aircraft) high-altitude vehicles;
- the circumstances in which certain vehicles that go into high altitude are not high-altitude vehicles and hence won't require a licence.

The decision about what went into the act and what went into the regulations was informed by the Legislation and Design Committee guidelines on the allocation of power between Parliament and the executive. In times of rapid innovation and technology change, the ability to change the law quickly is one of the most important considerations in this allocation of power. In the case of space activities, we were confronted not only with rapidly evolving technology but also with evolving standards internationally, which made the ability to be able to change the law quickly essential. For that

of certainty and transparency whilst not imposing unnecessary compliance costs.

Orbital debris mitigation plans

Orbital debris poses a significant threat to sustainable access to space and New Zealand wants to position itself as a responsible regulator by ensuring that space activities from New Zealand do not unacceptably contribute to the problem. However, it is also important that New Zealand does not prescribe detailed orbital debris mitigation requirements which could have the effect of deterring space activities from New Zealand and potentially inhibit innovative approaches to managing orbital debris.

The regulations prescribe the high-level outcomes that a debris mitigation plan would need to achieve, consistent with international best practice (regulation 13). The outcomes proposed are:

- limitation of debris released during normal operations;

Safety cases

The requirement for a safety case (schedule 3(10)) puts in place the regulatory mechanisms to enable the regulator to be satisfied of the safety of the proposed activity. At the highest level, the safety case provision will require the applicant to identify their approach to managing safety, including ensuring that known significant risks are identified and appropriate controls in place.

To inform what should be required for a safety case we looked at the regulations developed to manage safety in other regimes dealing with high-risk activities, such as the Health and Safety at Work (Major Facilities Regulations) 2016 and parts of the Railways Act 2005. From these we distilled the key elements that applicants will be required to include in a safety case. However, as space activities are new to New Zealand, the safety case requirements have been pitched at a relatively high level. On balance, we judged that this was preferable to setting highly detailed requirements upfront which might stifle innovation, and also

carried high risks of us getting it wrong. This is consistent with the approach taken more generally in relation to the regulations.

Learning as we go and adapting the regime as required

It is not often that you get to develop a new regulatory regime from scratch, let alone a regime that has to balance obligations arising from international treaties entered into 50 years ago with the present-day challenges of regulating an industry undergoing rapid technological and market changes.

We will continue to work with other New Zealand regulators who can bring knowledge and expertise about different aspects of the regime, including the Ministry of Transport, the Civil Aviation Authority and WorkSafe New Zealand. We will also build our relationships with overseas space agencies and regulators.

In order to implement a responsive regulatory regime, we will also continue to work with industry players and space participants to build relationships and ensure that people understand New

Zealand's regulatory requirements. A key focus for MBIE as the regulator is to ensure that we can meet industry's expectations of a responsive regulatory regime while we build our knowledge and capability. This will also ensure that our recommendations to ministers about any conditions on licences are commensurate with the risks posed by the activities.

MBIE will also be interested in public/community expectations of the way that the space regime works. Associated with this is how trade-offs are made between objectives related to the space regime and other regimes, such as the Civil Aviation Act 1990 and the Maritime Safety Act 1994.

An issue we identified early on as something to monitor is the potential for competing interests in the use of airspace and the sea between space activities and aviation and maritime activities. While the potential for conflict between Rocket Lab's activities and the interests of airlines and shippers is minimal, if space activity increases this may become an issue with which we will have to grapple.

The act requires that there be a review as soon as practicable after the expiry of three years from the commencement of the act (s86). This will provide an opportunity to adjust the primary legislation to take account of new developments in technology and/or changes to international space law and practice, as well as (we hope) a wealth of experience gained from regulating a New Zealand-based space industry.

- 1 The Liability Convention was invoked by Canada through diplomatic channels after the re-entry and subsequent crash of the RORSAT Kosmos 954 on 24 January 1978 in north-west Canada, and led to a settlement for the costs of the clean-up and damages.
- 2 The review of the Space Activities Act 1998 was announced by the minister for industry, innovation and science on 24 October 2015.
- 3 Even if satisfied of these matters, the minister may not issue a licence if he/she is not satisfied that the launch is in the national interest, or if national security risks have been identified, which would result in the issuing of a certificate with the effect of vetoing the proposed activity.

Acknowledgement

The authors wish to thank Professor Steven Freeland for his helpful comments on an earlier version of this article.

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